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EXAMINER	
JIANG, CHEN WEN	

ART UNIT	PAPER NUMBER
3744	

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Please find below and/or attached an Office communication concerning this application or proceeding.

NTI

Advisory Action Before the Filing of an Appeal Brief	**Application No.** 10/728,292	**Applicant(s)** ZHANG ET AL.	
	Examiner Chen-Wen Jiang	**Art Unit** 3744	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 11 December 2006 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:
   a) ☒ The period for reply expires *3* months from the mailing date of the final rejection.
   b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

   Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   (a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
   (b) ☐ They raise the issue of new matter (see NOTE below);
   (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
   The status of the claim(s) is (or will be) as follows:
   Claim(s) allowed: *9-12 and 17*.
   Claim(s) objected to: *19-25*.
   Claim(s) rejected: *1 and 13-15*.
   Claim(s) withdrawn from consideration: *2-8,16 and 18*.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Continuation Sheet.
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08) Paper No(s). _____
13. ☐ Other: _____.

Continuation of 11. does NOT place the application in condition for allowance because: Reference number 7 (Figs.1 and 2) is an auxiliary heater. Machine translated JP2002-250575 is enclosed.

CHEN WEN JIANG
PRIMARY EXAMINER

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to a heat pump use hot-water supply machine.
[0002]
[Description of the Prior Art] Conventionally, a heat pump use hot-water supply machine has ******** shown in JP,62-22380,B. In drawing 3 , while connecting a compressor 1, the refrigerant pair hydrothermal exchanger 2, a decompression device 3, and an evaporator 4 to annular one by one The warm water temperature detector 13 is formed between a condenser 2 and the auxiliary heater 10. The cold water temperature of a condenser 2 at the time of heat pump operation and concomitant use operation of the auxiliary heater 10 The heating capacity guarantee when controlling the amount of circulating water and being unable to offer a hot-water supply guarantee only in heat pump operation and the coefficient-of-performance fall of heat pump are prevented so that it may become low temperature to the time of heat pump individual operation. In addition, in drawing 8, 7 is a storage tank and 9 is a circulating pump.
[0003]
[Problem(s) to be Solved by the Invention] However, in order to heat heat pump using atmospheric-air heat, heating capacity is changed with an OAT. That is, though natural in order to make regularity outlet temperature of the refrigerant pair hydrothermal exchanger 22, the amount of circulating water is changed. Therefore, even if it controls uniformly the outlet temperature of the refrigerant pair hydrothermal exchanger 22 by the warm water temperature detector 13, since the outlet water temperature of the auxiliary heater 10 is changed at the time of concomitant use operation of heat pump and the auxiliary heater 10, hot water storing cannot be carried out to a storage tank 7 in the stable water temperature.
[0004]
[Means for Solving the Problem] The refrigerant circulator which made sequential connection of a compressor, a refrigerant pair hydrothermal exchanger, a decompression device, and the evaporator in order that this invention might solve the above-mentioned technical problem, A storage tank, a circulating pump, and the hot-water supply circuit that made sequential connection of said refrigerant pair hydrothermal exchanger, The 1st temperature detector which detects the water temperature of said refrigerant pair hydrothermal exchanger outlet of said hot-water supply circuit, A revolving-speed-control means to control the rotational frequency of said circulating pump by the signal of the quantity-of-hot-water detector which detects the water temperature in said storage tank, and said 1st temperature detector, The evaporation temperature detector which detects the coolant temperature of said evaporator inlet port, and the timer which will start time amount measurement if said quantity-of-hot-water detector detects predetermined temperature, A timer setting means by which the signal of said evaporation temperature detector performs time setting of said timer, If said quantity-of-hot-water detector detects below predetermined temperature, while energizing and carrying out a start up to said compressor and said circulating pump, the signal of setup-time termination of said timer is received. Said compressor, It

has the operation controller which suspends operation of said circulating pump, and it has considered as the configuration which set up the setup time of said timer for a long time as the temperature of said evaporator inlet port becomes low.

[0005] If according to the above-mentioned configuration tapping is carried out from said storage tank, the water to which water was supplied from the lower part of a storage tank reaches said quantity-of-hot-water detector and below predetermined temperature is detected, said operation controller will send the signal of additional heating ******. In that case, the signal of said evaporation temperature detector is received, and when evaporation temperature is low, said timer setting means lengthens the setup time of said timer, and carries out additional heating ******. On the contrary, when evaporation temperature is high, the setup time of said timer is shortened. Therefore, although water-heating load is large, since evaporation temperature is low, the heating capacity per unit time amount is small [winter etc.]. Therefore, additional heating operation time is lengthened, an additional heating quantity of hot water makes [many] it, and a molten-bath piece is prevented. moreover, additional heating ********** is shortened, and additional heating ****** is lessened, and useless, when heating capacity is large, since evaporation temperature is high, although middle Ki to a summer etc. has little water-heating load -- it boils, raising is reduced and energy saving is achieved.

[0006]

[Example] Although the example of this invention is explained below, the example of reference of this invention is explained with reference to drawing 1 before that.

[0007] In drawing 1 , as for the refrigerant pair hydrothermal exchanger which constitutes a condenser [in / 1 and / in 2 / a refrigerant circulator], and 3, a decompression device and 4 are evaporators, sequential connection is made and said compressor 1, said refrigerant pair hydrothermal exchanger 2, said decompression device 3, and said evaporator 4 constitute a refrigerant circulator. [a compressor] 5 is a storage tank, supplies water from the lower part and carries out tapping from the upper part. 6 is a circulating pump and is connected with the lower part of said storage tank 5. 7 is the heater equipped with the electric heater, it connects with the upper part of said storage tank 5, and sequential connection is made and said storage tank 5, said circulating pump 6, said refrigerant pair hydrothermal exchanger 2, and said heater 7 constitute a hot-water supply circuit. 8 is the 1st temperature detector, is prepared in said hot-water supply circuit, and transmits the 1st signal used as the water temperature which detected and detected the water temperature of said refrigerant pair hydrothermal exchanger 2 outlet, and this water temperature laying temperature. 9 is the 2nd temperature detector, is prepared in said hot-water supply circuit, and transmits the water temperature which detected and detected the water temperature of said heater 7 outlet, and the water temperature laying temperature here. 10 is a quantity-of-hot-water detector, and detects the water temperature in said storage tank 5. 11 is a revolving-speed-control means, and at the time of un-energizing, the rotational frequency of said circulating pump 6 is controlled so that the water temperature and water temperature laying temperature of said 1st temperature detector 8 as which it is detected are in agreement, and at the time of energization, said heater 7 controls the rotational frequency of said circulating pump 6 so that the water temperature and water temperature laying temperature which said 2nd temperature detector 9 detects are in agreement. 12 -- operation storage -- it is -- just before -- said heater 7 -- un--- it memorizes whether it was energized, or energized and operated. while 13 is an operation controller and operating said compressor 1 and said circulating pump 6 in response to the signal from said quantity-of-hot-water detector 10 -- the signal from said operation storage 12 -- winning popularity -- said heater 7 -- energization -- or it un-energizes.

[0008] In the above-mentioned configuration, the case where it is said heater 7 first at the time of not energizing is described. The hot gas refrigerant breathed out from said compressor 1 flows into said refrigerant pair hydrothermal exchanger 2, and heats water in a heat dissipation operation here. And the refrigerant which radiated heat is decompressed with said decompression device 3, and flows into said evaporator 4. And endoergic [of the atmospheric-air heat] is carried out, it is evaporative-gas-ized, and it returns to said compressor 1. On the other hand, the water which flowed out of the lower part of said storage tank 5 flows into said refrigerant pair hydrothermal exchanger 2 through said circulating pump 6, is heated in a heat dissipation operation of a refrigerant, and is stored from the upper part of said

storage tank 5. Here, revolving speed control of said circulating pump 6 is performed so that said 1st temperature detector 8 may detect the outlet temperature of said refrigerant pair hydrothermal exchanger 2 and delivery and an outlet water temperature may become laying temperature for said revolving-speed-control means 11 about a signal. Below, concomitant use operation of said compressor 1 and said heater 7 energization is described. In this case, the water heated by said refrigerant pair hydrothermal exchanger 2 is further heated to an elevated temperature with said heater 7. And in response to the signal of said 2nd temperature detector 9, said revolving-speed-control means 11 performs revolving speed control of said circulating pump 6, and is stored from the upper part of said storage tank 5 so that the outlet temperature of said heater 7 may turn into laying temperature.

[0009] And if tapping is carried out from said storage tank 5, water will be supplied to low-temperature hot water from the lower part of said storage tank 1, and **** will go up to the upper part. And if the water to which water was supplied reaches to the location of said quantity-of-hot-water detector 10, said quantity-of-hot-water detector 10 will detect it, and a signal will be sent to said operation controller 13. Then, said operation controller 13 receives the signal of said operation storage 12, immediately before, judges whether said heater 7 was un-energizing or energization, and starts additional heating ******. First, said heater 7 describes the case where operation is performed by un-energizing, just before additional heating ******. In this case, revolving speed control of said circulating pump 6 is performed so that the water temperature which energized said compressor 1 and said circulating pump 6, and said 1st temperature detector 8 detected may serve as laying temperature, it is sent from the lower part of said storage tank 5, water is heated through said refrigerant pair hydrothermal exchanger 2, and it is made to flow into the upper part of said storage tank 5. On the other hand, when it energizes to said heater 7 and is operated just before additional heating ******, after energizing to said compressor 1, said circulating pump 6, and said heater 7, starting additional heating ******, being sent from the lower part of said storage tank 5 and heating water by said refrigerant pair hydrothermal exchanger 2, heating at high temperature is further carried out with said heater 7. Revolving speed control of said circulating pump 6 is performed, and the molten bath which carried out heating at high temperature is made to flow into the upper part of said storage tank 5 in that case, so that said the 2nd detection water temperature and laying temperature of the temperature detector 9 may be in agreement. Therefore, since it boils at the time of additional heating ****** and hot water storing of the raising water temperature is carried out to residual molten iron by this **, the water temperature which the water temperature in a storage tank 5 became uniform, and was stabilized when tapping was carried out comes to be obtained.

[0010] Below, the example of this invention is explained. In drawing 2 , a same sign is shown about the same thing as the previous example of reference which constitutes and acts, and explanation is omitted. 14 is an evaporation temperature detector and detects the coolant temperature of said evaporator 4 inlet port. 15 is a timer and starts time amount measurement in response to the signal from said quantity-of-hot-water detector 10. It is a timer setting means, 16 is long in the setup time of said timer 15, when the setup time of said timer 15 is set up in response to the signal from said evaporation temperature detector 14 and the signal from said evaporation temperature detector 14 expresses a low-temperature signal rather than predetermined temperature, and conversely, when it expresses a hot signal, it is set up short. 17 is an operation controller, and it suspends operation of said compressor 1, said circulating pump 6, and said heater 7 in response to the signal of setup-time termination of said timer 15 while it carries out the start up of said compressor 1, said circulating pump 6, and said heater 7 in response to the signal from said quantity-of-hot-water detector 10.

[0011] In the above-mentioned configuration, if the water to which tapping was carried out and to which water was supplied from said storage tank 5 arrives at the location of said quantity-of-hot-water detector 10, said operation controller 17 will energize said compressor 1, said circulating pump 6, or said heater 7, and will start additional heating ******. And said timer 15 starts time amount measurement by the signal from said quantity-of-hot-water detector 10. The signal of said evaporation temperature detector 14 is received, and in that case, when evaporation temperature is lower than predetermined temperature, conversely, said timer setting means 16 is long in the time setting of said timer 15, and time setting of said timer 15 is shortened, and when evaporation temperature is high, additional heating ****** is

continued until it reaches predetermined time. Therefore, although feed water temperature, such as winter, is low and water-heating load is large when residual molten iron decreases, since evaporation temperature is low, additional heating ****** is small. Therefore, additional heating operation time can be lengthened, an additional heating quantity of hot water can be made [many], and a molten-bath piece can be prevented. On the other hand, although there is little water-heating load, such as middle Ki to a summer, since evaporation temperature is high, when heating capacity is large, additional heating operation time can be shortened, an additional heating quantity of hot water can be lessened, useless additional heating ****** can be lost, and energy saving can be achieved.

[0012]

[Effect of the Invention] As explained above, the heat pump hot-water supply machine of this invention sets up the setup time of a timer for a long time as the temperature of an evaporator inlet port becomes low, tapping is carried out from a storage tank, and if the water to which water was supplied reaches a quantity-of-hot-water detector, as for an operation controller, the signal of additional heating ****** will be sent. In that case, the signal of an evaporation temperature detector is received, and when evaporation temperature is low, said timer setting means lengthens the setup time of said timer, and carries out additional heating ******. On the contrary, when evaporation temperature is high, the setup time of said timer is shortened and carries out additional heating ******. Therefore, when evaporation temperature, such as winter, is low, additional heating operation time becomes long, an additional heating quantity of hot water increases, and when evaporation temperature, such as middle Ki to a summer, is high, since additional heating ********** is shortened and an additional heating quantity of hot water is lessened, energy saving can be achieved.

[Translation done.]

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] The block diagram of the heat pump hot-water supply machine used as the example of reference of this invention
[Drawing 2] The block diagram of the heat pump hot-water supply machine in the example of this invention
[Drawing 3] The block diagram of the conventional heat pump hot-water supply machine
[Description of Notations]
1 Compressor
2 Refrigerant Pair Hydrothermal Exchanger
3 Decompression Device
4 Evaporator
5 Storage Tank
6 Circulating Pump
7 Heater
8 1st Temperature Detector
9 2nd Temperature Detector
10 Quantity-of-Hot-Water Detector
11 Revolving-Speed-Control Means
12 Operation Storage
13 Operation Controller
14 Evaporation Temperature Detector
15 Timer
16 Timer Setting Means
17 Operation Controller
18 3rd Temperature Detector
19 Operation Controller
20 Operation Controller
21 Temperature Detector
22 Revolving-Speed-Control Means
23 Operation Controller
24 Operation Controller
25 Closing Motion Valve
26 By-path Pipe
27 Flow Regulation Means
28 Operation Controller

[Translation done.]